

RECEIVED  
APR 8 1996  
FCC MAIL ROOM

Russell Cage  
1615 Morton  
Ann Arbor MI 48104  
3 April 1996

Office of the Secretary  
Federal Communications Commission  
Washington DC 20554  
In re: RM 8775

DOCKET FILE COPY ORIGINAL

Abstract: The petition of the ACTA asks for a ban, for all intents and purposes, on telephony via the Internet. The effect of the Internet is to expose the true cost of communication; to act to maintain the ACTA's rates is anti-competitive, anti-consumer and not in the public interest. While the FCC could destroy the companies currently offering products in this niche, Internet telephony itself cannot be regulated apart from the Internet itself due to technical constraints; prohibition is effectively impossible. Finally, such regulation would destroy the nascent Internet telephony industry in the United States, putting us behind in a technology where we are now ahead of the entire world. This petition should be denied outright.

Honorable Commissioners of the FCC,

The petition by the American Carriers Telecommunications Association (ACTA) is ill-advised and should be denied. The claims made on its behalf are false or half-truths, and the petition's goal is to halt the march of lower cost and more capable technologies for using the telecommunications infrastructure. Changes in technology which have made the Internet itself possible have changed the economics of all telecommunications, of which voice transmission is only one form. The ACTA's petition is an attempt to artificially increase the cost of long-distance voice service by preventing competition from alternative technologies and carriers. Delaying the inevitable fall in the cost of service will cost consumers billions of dollars and decrease the competitive strength of the United States. If any action at all is undertaken, it should be to permit the members of the ACTA to cut their rates to remain competitive so long as they are able.

The ACTA claims, in effect, that long-distance telephone service should remain a high-cost item, billed by usage at rates of several dollars per hour, perhaps for the virtue of carrying voice traffic. An examination of the cost of telecommunications services shows that this is many times the true cost of the underlying service. Today's cost of a data circuit capable of carrying quality voice data is roughly seventy dollars (\$70) per month<sup>1</sup>. These data circuits run over the same optical-fiber backbone which carries the voice telephone network. The disparity is between ten cents per minute and ten cents per hour.

<sup>1</sup> Eugene and Nancy Leidel, Leidel and Howell Computing, personal communication. The monthly rate for Internet service with a T-1 data line, an IBM RS-6000 computer and maintenance is \$1700 per month. A T-1 line will carry 24 voice circuits without multiplexing, for a per-circuit cost of \$70.83 per month including the terminal computer (equivalent to a switch or PBX). This rate is for 24/7 use.

When data communications services reached enough people, it was inevitable that some of them would notice this disparity in pricing and move to take advantage of it. Changes in telecommunications are being driven by advances in technology, particularly optical fibers. Optical fiber bandwidth is amazingly cheap and the limits are far away; the theoretical limit is equivalent to passing all the telephone conversations in the nation over one (1) fiber.<sup>2</sup> As the amount of bandwidth available has soared<sup>3</sup>, the pressure to reduce prices and attract new uses has grown. Most of the capacity of the fiber in place is unused; over two-thirds of the fiber beneath the Atlantic ocean is currently "dark"<sup>4</sup>. The claim of the ACTA that Internet telephone traffic will "strain the Internet" is plainly false, as current infrastructure will support hundreds of times current usage with only minor upgrades. We do not have a problem with holding traffic down to capacity, we have a problem of multiplying traffic to fill unused capacity.

The essence of the ACTA's complaint is that Internet telephony costs but three cents a minute, which is still 20 times the cost of the data circuit it requires. I pose the question, what is wrong with this? Is not the goal of our regulatory structure to provide more services and decrease costs? Perhaps the members of the ACTA should have

<sup>2</sup> "Scientific American", September 1995, p. 73, quotes a figure of 25 terabits per second as the limit for a single fiber. At 64 kilobits/second per circuit, this is equivalent to 400 million circuits.

<sup>3</sup> *ibid*, page 74. Current practice achieves 2.5 gigabits per second per fiber. AT&T has demonstrated 340 gigabits per second over a 90-mile fiber circuit, equivalent to over 5 million voice circuits per fiber. By implication, the capacity of the current fiber network can be multiplied by at least 136 times by changing transmitters and amplifiers.

<sup>4</sup> "The Economist", "The Death of Distance",  
<http://www.economist.com/surveys/distance/index.html>

No. of Copies rec'd  
List ABCDE

CCB

their tariffs deregulated and their cross-subsidies removed to allow them to meet all challengers head-on. They should certainly not be given immunity for the sake of business as usual!

Other claims of the ACTA are bogus. The vendors named are not "Providers of Non-tariffed...Telecommunications Services" any more than the manufacturers of a PBX. The users of Internet telephone products are paying for their service up-front at market rates and have provided their own "switch"; they are not getting services "at virtually no charge for the call". Amateur radio operators have been providing "phone patch" services over radio links for at least forty years; the costs are borne by the amateurs, who provide the radio gear. Large businesses have long been buying long-distance services at market rates to connect their own, wide-spread sites; the "hardship" inflicted upon the members of the ACTA is that individuals and small businesses are gaining the same ability to opt out of the distorting cross-subsidies and high tariffs which have been forced upon them until now. These artificial costs have been scheduled to decrease regardless, so this development only hastens the inevitable.

Another fact is that enacting a prohibition on Internet telephony will in no way eliminate it. The US vendors of special-purpose hardware and commercial software can be put out of business, but that is all. The capability of the average personal computer has grown to the point where anyone with a fast modem and a multi-media sound card with a microphone has all the necessary hardware. Commercial software is also unnecessary. Many widely-used software products are distributed as "shareware" or for free, and software has long been written as a cottage industry and a hobby.

The legal issues are troubling as well. Data carried on the Internet is just that, data. If two users are exchanging pictures, executable programs, FAX, lists of numbers, or

digitized sound, the only way to determine what they are communicating is to examine the content of the data. To undertake this would be to make the Federal Communications Commission the largest surveillance agency in the world. This is not part of its charter. Further, to outlaw the transmission of an idea as real-time digitized voice via the Internet while permitting it to be sent as ASCII, as facsimile, or in any other format raises First Amendment and other Constitutional issues. Such a ruling would invite an immediate court challenge as well as enormous civil disobedience.

Products of vast importance and great benefit would be prevented from coming to market by a prohibition on Internet telephony. Pictorial data already traverses the Internet between a million nodes a day. The integration of voice service with the Internet would bring advances both mundane and sublime. The long-foretold video phone would arrive, but also the ability of groups of people from two on up to speak to each other while viewing and working on the same text, drawing, or other point of interest as if they were all around a table together. For business, this eliminates many costs of travel and would make us more competitive. For the individual, this offers freedom of association independent of distance at a very affordable cost. These prospects must not be underestimated.

The future of long-distance telecommunications is flat-rate for access, unlimited usage<sup>5</sup>. The limits to growth are some enormous distance away, and the unused capacity is a void which must be filled. The necessity is to find a way to make use of what has spilled from the cornucopia. The ACTA's petition is an attempt to continue a regime of artificial scarcity in the middle of plenty for the sake of their own profits. I trust you do to the right thing and deny it.

Sincerely,



Russell Cage

---

<sup>5</sup> "The Economist", \_The Death of Distance\_: <http://www.economist.com/surveys/distance/index.html>